



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/784,234	02/14/2001	Shozo Nagano	30-5000-(4015) DivI	3215

7590 05/19/2003

David G Latwesen PH>D  
Wells St John  
601 West First Avenue  
Suite 1300  
Spokane, WA 99201

EXAMINER

IP, SIKYIN

ART UNIT

PAPER NUMBER

1742

DATE MAILED: 05/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/784,234

Applicant(s)

NAGANO ET AL.

Examiner

Sikyln Ip

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 March 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 60-72 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 60-72 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 19.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 60-62, 65, and 67-72 are rejected under 35 U.S.C. § 103 as being unpatentable over USP 5590389 to Dunlop et al.

4. The Dunlop disclose(s) the features including the claimed Cu based target material and grain size (col. 3, line 65 to col. 4, line 9 and lines 22-25; and col. 5, line 66 to col. 6, line 2), and second phase/precipitate (col. 2, lines 18-26). The difference between the reference(s) and the claims are as follows: Dunlop does not disclose purity of the Cu element, electromigration resistance, and thermal stability as recited in instant claims 70-71. However, using high purity elemental Cu for sputtering target material is known in art of cited reference. The instant Cu based

sputtering target material is overlapped by the cited reference; consequently, the electromigration resistance and thermal stability properties as recited in the instant claims would have been inherently possessed by the teachings of the cited reference. Therefore, the burden is on the applicant to prove that the product of the prior art does not necessarily or inherently possess characteristics attributed to the claimed product.

In re Best, 195 USPQ, 430 and MPEP 2112.01.

“Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established, *In re Best*, 195 USPQ 430, 433 (CCPA 1977). ‘When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.’ *In re Spada*, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. *In re Best*, 195 USPQ 430, 433 (CCPA 1977).”

5. An obviousness rejection based on similarity in chemical structure and function entails the motivation of one skilled in the art to make a claimed compound, in the expectation that compounds similar in structure will have similar properties. *In re Gyurik*, 596 F.2d 1012, 1018, 201 USPQ 552, 557 (CCPA 1979); See *In re May*, 574 F.2d 1082, 1094, 197 USPQ 601, 611 (CCPA 1978) and *In re Hoch*, 57 CCPA

1292, 1296, 428 F.2d 1341, 1344, 166 USPQ 406, 409 (1970). Because of the close structural similarity between the claimed compounds at issue here and the compounds of cited reference and because those prior art compounds possess claimed activity, it is concluded that the required motivation is present here. See *In re Wood*, 582 F.2d 638, 641, 199 USPQ 137, 139 (CCPA 1978). When prior art compounds essentially “bracketing” the claimed compounds in structural similarity are all known, one of ordinary skill in the art would clearly be motivated to make those claimed compounds in searching for new products. Therefore, the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the subject matter disclosed by the reference. It has been held that overlapping ranges have been held to be a *prima facie* case of obviousness. See *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974).

6. Claims 63-64, and 66 are rejected under 35 U.S.C. § 103 as being unpatentable over USP 5590389 to Dunlop et al in view of USP 4786469 to Weber et al.

7. The Dunlop reference(s) disclose(s) the features including the claimed sputtering target with ultra-fine grains. The features relied upon described above can be found in the Dunlop reference(s) at col. 1, lines 21-25 and lines 45-59; and col. 4, lines 10-27. The difference between the reference(s) and the claims are as follows: Dunlop does not explicitly disclose the claimed Cu based alloy containing Sr, Ba, and Se elements. However, Weber in

the abstract and col. 3, lines 21-34 disclose(s) alloying elements that would refine Cu alloy grain size in the same field of endeavor or the analogous metallurgical art. Therefore, combining known ingredient having known functions, to provide a composition having the additive effect of each of the known functions is within realm of performance of ordinary skill artisan. It has been held that combining known ingredient having known functions, to provide a composition having the additive effect of each of the known functions is within realm of performance of ordinary skill artisan. In re Castner, 186 USPQ 213 (217) and In re Raner, 134 USPQ 343 (CCPA 1962).

*Response to Arguments*

8. Applicant's arguments filed March 14, 2003 have been fully considered but they are not persuasive.
9. Applicants' argument in page 6, second full paragraph of the instant remarks is noted. But, pages 11-12 of the instant specification fail to substantiate the claimed ranges are critical. Mere argument or conclusory statements in the specification is not sufficient. In re Geisler (CA FC) 43 USPQ2d 1362 (7/7/1997). Comparison must be done under identical condition except for the novel features of the invention. In re Brown, 173 USPQ 685 and In re Chapman, 148 USPQ 711. The showing of unexpected results must be occurred over the entire claimed range. In re Clemens, 622 F.2d 1029, 206 USPQ 289, 296 (CCPA 1980). The scope of the showing must be commensurate with the scope of the claims. In re Tiffin, 448 F.2d 791, 792 (Fed. Cir. 1971), In re Coleman, 205 USPQ 1172, In re Grasselli, 713 F.2d 731, 743, 218 USPQ 769, 778 (Fed. Cir. 1983), and In re Greenfield, 197 USPQ 227. Absent a showing of new and unexpected results, the mere optimizing in a known range for a

desired result is within skill of ordinary artisan. In re Aller, et al., 105 USPQ 233.

10. Applicants argue that grain refining elements of Weber require Ti and/or Zr. But, instant claim 60 has a transitional expression "consisting essentially of" which limits the scope of a claim to the specified ingredients and those that do not materially affect the basic and novel characteristics of a composition. Ex parte Davis, et al., 80 USPQ 448, 450 (PTO Bd. App. 1948), In re Janakirama-Rao, 317 F. 2d 951, 137 USPQ 893, 894 (CCPA 1963), In re Garnero, 412 F 2d 276, 162 USPQ 221, 223 (CCPA 1969), and In re Herz, et al., 190 USPQ 461, 463 (CCPA 1976). When applicant contends that modifying components in the reference composition are excluded by the recitation of "consisting essentially of" applicant has the burden of showing the basic and novel characteristic of his/her composition - i.e. a showing that the introduction of these components would materially change the characteristics of applicant's composition. In re De Lajarte, 337 F 2d 870, 143 USPQ 256 (CCPA 1964) and Ex parte Davis, et al., 80 USPQ 448, 450 (PTO Bd. App. 1948).

### *Conclusion*

The above rejection relies on the reference(s) for all the teachings expressed in the text(s) of the references and/or one of ordinary skill in the metallurgical art would have reasonably understood or implied from the text(s) of the reference(s). To emphasize certain aspect(s) of the prior art, only specific portion(s) of the text(s) have been pointed out. Each reference as a whole should be reviewed in responding to the rejection, since other sections of the same reference and/or various combination of the cited references may be relied on in future rejection(s) in view of amendment(s).

All recited limitations in the instant claims have been met by the rejections as set forth above.

Applicant is reminded that when amendment and/or revision is required, applicant should therefore specifically point out the support for any amendments made to the disclosure. See MPEP § 2163.06 (a) and 37 C.F.R. § 1.119.

Serial No: 09/784,234  
Art Unit: 1742

-7-

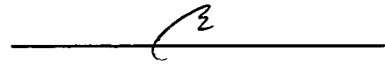
***Examiner Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Ip whose telephone number is (703) 308-2542. The examiner can normally be reached on Monday to Friday from 5:30 A.M. to 2:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Roy V. King, can be reached on (703)-308-1146.

The facsimile phone number for this Art Unit 1742 are (703) 305-3601 (Official Paper only) and (703) 305-7719 (Unofficial Paper only). When filing a FAX in Technology Center 1700, please indicate in the Header (upper right) "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communication with the PTO that are not for entry into the file of the application. This will expedite processing of your papers.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0651.

  
\_\_\_\_\_  
SIKYIN IP  
PRIMARY EXAMINER  
ART UNIT 1742

S. Ip  
May 19, 2003